

In the Claims:

Claims 1-22 (Canceled).

Claim 23 (New). A method for transferring the trait of interest into a maize plant wherein said trait is associated with one or more of the following novel restriction fragments identified by one or more molecular marker-enzyme combinations thereof:

BNL5.62, *EcoRI*, 10.3 kb; np197, *HindIII*, 3.9 kb; UMC157, *EcoRI*, 6.5 kb and 3.3 kb; UMC157, *HindIII*, 5.5 kb; UMC157, *BamHI*, 14.0 kb, 8.5 kb and 4.5 kb; UMC11, *BamHI*, 7.0 kb; CSU3, *BamHI*, 10.0 kb and 7.6 kb; UMC67, *EcoRI*, 19.2 kb; UMC67, *BamHI* 13.4 kb, 11.0 kb and 1.6 kb; CSU92, *BamHI*, 13.3 kb and 7.5 kb; asg62, *BamHI*, 12.7 kb, 9.7 kb and 6.6 kb; UMC58, *HindIII*, 3.3 kb; CSU164, *EcoRI*, 9.0 kb and 7.0 kb; UMC128, *HindIII*, 6.0 kb; UMC107, *EcoRI*, 7.5.0 kb, 6.3 kb and 6.1 kb; UMC140, *EcoRI*, 4.9 kb; UMC140, *HindIII*, 6.5 kb; adh1, *HindIII*, 9.4 kb; adh1, *BamHI*, 9.4 kb; UMC161, *HindIII*, 3.3 kb; BNL8.29, *HindIII*, 9.3 kb and 8.3 kb; UMC53, *EcoRI*, 9.4 kb; UMC53, *EcoRV*, 8.4 kb, 3.8 kb and 3.0 kb; UMC6, *EcoRI*, 3.8 kb; UMC6, *HindIII* 9.4 kb; UMC6, *BamHI*, 13.2 kb, 12.7 kb, and 7.0 kb; UMC61, *HindIII*, 3.4 and 2.8 kb *agrr167*, *BamHI*, 5.7 kb, 4.5 kb and 4.0 kb; UMC34, *EcoRI*, 7.5 kb and 5.4 kb; UMC34, *HindIII*, 8.8 kb, 6.5 kb and 5.8 kb; UMC34, *BamHI*, 9.4 kb; UMC135, *HindIII*, 11.6 kb and 10.8 kb; UMC131, *EcoRI*, 10.6 kb, 5.8 kb and 4.3 kb; UMC55, *EcoRI*, 3.9 kb; UMC55, *HindIII*, 4.3 kb; UMC5, *EcoRI*, 5.4 kb; UMC5, *HindIII*, 6.5 kb; UMC49, *BamHI*, 8.2 kb; UMC36, *BamHI*, 4.2 kb; UMC32, *EcoRI*, 5.3 kb; UMC32, *HindIII* 6.7 kb, 6.0 kb, and 2.8 kb; asg24, *HindIII*, 7.2 kb and 6.4 kb; UMC121, *EcoRI*, 3.7 kb and 3.2 kb; BNL8.35, *HindIII*, 9.9 kb and 8.7 kb; UMC50, *BamHI*, 7.8 kb, 6.8 kb, 5.8 kb and 3.8 kb; UMC42, *HindIII*, 10.4 kb, 9.2 kb, 8.9 kb, 7.9 kb, 7.6 kb, and 3.7 kb; np1247, *EcoRI*, 8.0 kb; np1247, *HindIII* 3.0 kb; UMC10, *HindIII*, 3.0 kb; UMC10, *EcoRI*, 6.5 kb and 5.5 kb; UMC102, *EcoRI*, 2.7 kb; BNL6.06, *EcoRI*, 6.8 kb; CSU240, *EcoRI*, 10.6 kb, 4.5 kb and 3.3 kb; BNL5.37, *HindIII*, 10.3 kb, 5.8 kb and 3.5 kb; np1296, *EcoRI*, 7.9 kb; UMC3, *EcoRI* 2.5 kb and 2.0 kb; np1212, *HindIII*, 4.3 kb; np1212, *BamHI*, 5.4 kb; UMC39, *EcoRI*, 12.2 kb, 9.2 kb, 7.8 kb and 7.1 kb; *phi10080*, *BamHI*, 9.7 kb; UMC63, *HindIII*, 9.5 kb and 4.3 kb; CSU303, *EcoRI*, 10.0 kb; UMC96, *HindIII*, 11.8 kb, 6.4 kb and 5.5 kb; UMC96, *BamHI*, 7.5 kb; UMC2, *EcoRI*, 11.8 kb, 10.4 kb, 8.0 kb and 3.9 kb; CSU25,

HindIII, 5.2 kb, 4.5 and 4.2 kb; agr115, EcoRI, 8.0 kb and 5.4 kb; agr115, BamHI, 5.4 kb and 3.5 kb; phi20725, EcoRI, 10.3 kb, 9.7 kb and 7.2 kb; phi20725, HindIII, 1.5 kb; UMC31, EcoRI, 5.8 kb and 2.0 kb; UMC31, BamHI 6.5 kb; UMC55, EcoRI, 3.9 kb; UMC55, HindIII, 4.3 kb; CSU235, HindIII, 6.8 kb and 3.0 kb; CSU585, HindIII, 8.3 kb and 6.1 kb; BNL5.46, HindIII, 13.7 kb, 10.5 kb, 9.7 kb and 5.1 kb; agr321, BamHI, 5.5 kb; agr89, HindIII, 7.1 kb; npi386, HindIII, 12.6 kb, 9.3 kb and 8.2 kb; UMC42, HindIII, 19.2 kb, 10.3 kb 8.9 kb, 7.6 kb, 3.7 kb and 3.0 kb; tda62, BamHI, 5.5 kb, 5.2 kb, 4.8 kb and 4.2 kb; BNL5.71, EcoRV, 11.3 kb, 6.8 kb, and 5.7 kb; UMC156, HindIII, 3.0 kb; UMC66, EcoRI, 10.5 kb; UMC66, BamHI, 3.7 kb and 2.4 kb; UMC19, BamHI, 12.3 kb; UMC104, HindIII, 12.4 kb, 11.6 kb and 7.5 kb; UMC104, BamHI, 9.4 kb; UMC133, HindIII, 10.6 kb, 9.9 kb, 9.2 kb and 7.7 kb; UMC52, BamHI, 8.7 kb, 6.9 kb, 3.8 kb, 3.0 kb and 2.0 kb; BNL15.07, HindIII, 2.9 kb and 2.7 kb; npi409, EcoRI, 9.4 kb; npi409, HindIII, 10.4 kb, 9.0 kb and 3.9 kb; UMC147, HindIII, 16.3 kb, 3.8 kb and 2.4 kb; asg73, EcoRI, 3.8 kb; UMC90, HindIII, 7.7 kb, 6.5 kb, 2.8 kb and 1.6 kb; UMC90, BamHI, 9.0 kb; UMC72, 8.5 kb; UMC27, HindIII, 8.3 kb and 4.5 kb; UMC27, BamHI, 6.5 kb; UMC43, BamHI, 9.7 kb, 7.3 kb and 5.7 kb; tda37, BamHI, 9.0 kb, 8.0 kb and 6.4 kb; UMC43, BamHI, 9.7 kb, 7.3 kb and 5.7 kb; UMC40, BamHI, 7.2 kb, 4.7 kb and 4.3 kb; BNL7.71, HindIII, 10.6 kb; BNL5.71, BamHI, 11.3 kb, 6.8 kb and 5.7 kb; tda62, BamHI, 6.5 kb and 5.5 kb; UMC68, HindIII, 6.0 kb; UMC104, HindIII, 12.4 kb, 11.6 kb and 7.5 kb; UMC104, BamHI, 9.4 kb; phi10017, BamHI, 15.1 kb and 9.5 kb; tda50, BamHI, 8.5 kb; npi373, HindIII, 6.5 kb, 5.6 kb, 5.1 kb and 3.0 kb; tda204, BamHI, 4.0 kb; npi393, EcoRI, 12.1 kb, 8.5 kb, 7.0 kb and 5.6 kb; UMC65, HindIII, 2.9 kb; UMC46, EcoRI, 6.5 kb and 5.6 kb; asg7, HindIII, 6.3 kb; UMC28, HindIII, 15.8 kb and 11.9 kb; UMC28, BamHI, 9.9 kb, 7.6 kb and 6.6 kb; UMC134, HindIII, 7.5 kb and 4.7 kb; asg8, HindIII, 10.8 kb, 8.7 kb and 8.4 kb; phi20581, HindIII, 4.2 kb; O2, EcoRI, 9.4 kb; asg34, HindIII, 4.5 kb; BNL15.40, HindIII, 5.8 kb; UMC116, EcoRI, 9.5 kb; UMC110, BamHI, 10.6 kb, 4.9 kb and 3.9 kb; BNL8.32, HindIII, 8.9 kb, 7.4 kb and 7.1 kb; BNL14.07, EcoRI, 6.4 kb; UMC80, HindIII, 10.7 kb, 8.2 kb and 2.4 kb; BNL16.06, EcoRI, 6.8 kb and 1.9 kb; BNL16.06, HindIII, 5.7 kb, 3.0 kb and 1.6 kb; phi20020, HindIII, 7.8 kb, 6.6 kb and 5.1 kb; npi114, HindIII, 10.0 kb, 8.8 kb and 6.3 kb; BNL9.11, HindIII, 3.4 kb; UMC103, HindIII, 6.9 kb; UMC124, HindIII, 8.0 and 7.0; UMC124, BamHI, 6.6 kb, 2.6 kb and 1.6 kb; UMC120, HindIII, 3.2 kb, 2.3 kb and 1.4 kb; UMC89, EcoRI, 7.3 kb; UMC89, HindIII, 7.3 kb; UMC89, BamHI, 9.5 kb, 6.0 kb, 5.2 kb and 4.5 kb; UMC89, MspI, 6.7 kb and 5.8 kb; BNL12.30, EcoRI, 3.5 kb; UMC48, HindIII, 6.2 kb,

5.3 kb, 4.7 kb, 4.2 kb and 3.5 kb; UMC53, *EcoRI*, 3.8 kb and 3.0 kb; UMC53, *EcoRV*, 8.4 kb; np1268, *BamHI*, 6.4 kb; UMC7, *BamHI*, 4.2 kb; UMC3, *EcoRI*, 3.5 kb and 2.0 kb; phi10005, *EcoRI*, 15.0 kb and 1.6 kb; UMC113, *EcoRI*, 5.9 kb and 5.4 kb; UMC113, *BamHI*, 12.8 kb, 11.8 kb and 10.5 kb; UMC192, *HindIII*, 11.4 kb and 6.4 kb; wx (waxy), *HindIII*, 21.0 kb; UMC105, *EcoRI*, 3.9 kb; CSU147, *HindIII* 5.9 kb; BNL5.10, *HindIII*, 6.1 kb and 4.4 kb; UMC114, *BamHI*, 12.6 kb, 11.5 kb, 10.0 kb, 8.8 kb, 7.5 kb and 6.5 kb; UMC95, *EcoRI*, 5.6 kb; UMC95, *HindIII*, 7.7 kb, 7.3 kb, 4.8 kb, 4.5 kb 4.1 kb and 1.7 kb; UMC95, *BamHI*, 15.0 kb and 9.0 kb; asg44, *EcoRI*, 5.3 kb; CSU61, *EcoRI*, 8.1 kb and 4.8 kb; BNL7.57, *BamHI*, 11.6 kb and 5.9 kb; CSU54, *EcoRI*, 14.7 kb and 12.6 kb; phi20075, *EcoRI*, 7.1 kb; np1285, *EcoRI*, 12.4 kb, 9.4 kb and 6.0 kb; KSU5, *EcoRI*, 9.8 kb, 7.6 kb, 6.1 kb, 3.8 kb and 3.5 kb; UMC130, *EcoRI*, 13.5 kb and 7.0 kb; UMC130, *HindIII*, 4.8 kb and 3.2 kb; UMC130, *BamHI*, 3.2 kb; UMC64, *HindIII*, 3.3 kb; UMC152, *HindIII*, 12.4 kb, 7.1 kb and 5.6 kb; phi06005, *EcoRI*, 12.8 kb; UMC163, *HindIII*, 7.0 kb, 4.8 kb; 3.0 kb; 2.6 kb and 2.3 kb; UMC44, *HindIII*, 9.8 kb, 8.7 kb, 7.2 kb, 5.5 kb and 4.0 kb; BNL10.13, *HindIII*, 10.8 kb; np1306, *HindIII*, 7.0 kb; pmt1, *HindIII*, 2.3 kb; pmt2, *HindIII*, 2.8 kb and 2.1 kb; pmt5, *HindIII*, 12.3 kb, 8.1 kb, 3.6 kb, 3.2 kb and 2.5 kb; tda48, *HindIII*, 8.2 kb; tda53, *HindIII*, 3.8 kb and 2.2 kb; tda168, *EcoRI*, 3.6 kb; tda16, *HindIII*, 4.3 kb; and tda17, *HindIII*, 7.0 kb; tda250, *BamHI*, 4.0 kb,

said fragments produced from a procedure comprising the steps of:

- (a) crossing a *Tripsacum* female parent with a teosinte male parent to produce (*Tripsacum* X teosinte) hybrid seed or a teosinte female parent with a *Tripsacum* pollen donor to produce (teosinte X *Tripsacum*) hybrid seed; then
- (b) growing a (*Tripsacum* X teosinte) or (teosinte X *Tripsacum*) hybrid plant from said seed to maturity; then
- (c) crossing said plant from (*Tripsacum* X teosinte) or (teosinte X *Tripsacum*) hybrid plant with maize to produce seed;
- (d) harvesting the seed produced in (c);
- (e) growing the plant from the seed in (d);
- (f) screening the plant's DNA for one or more of the novel restriction fragments uniquely associated with the trait.

Claim 24 (New). The maize seed from the plant according to claim 23.

Claim 25 (New). The maize plants, all derivatives, subsequent generations, variants, mutants, modifications, and cellular and molecular components from the seed according to claim 24.

Claim 26 (New). The pollen from the plant according to claim 23 or claim 25.

Claim 27 (New). The tissue cultures, all derivatives, variants, mutants, modifications, and cellular and molecular components from the plant according to claim 23 or claim 25.

Claim 28 (New). The plant according to claim 23 or claim 25 whereby said plant has improved grain quality.

Claim 29 (New). The plant according to claim 23 or claim 25, whereby said plant is tolerant of acid soils.

Claim 30 (New). The plant according to claim 23 or claim 25 whereby said plant is resistant to aflatoxin.

Claim 31 (New). The plant according to claim 23 or claim 25 whereby said plant is resistant to corn borer.

Claim 32 (New). The plant according to claim 23 or 25 whereby the roots of said plant contain aerenchyma.

Claim 33 (New). The plant according to claim 23 or 25 whereby said plant tolerates saturated soils.

Claim 34 (New). The plant according to claim 23 or 25 whereby said plant is resistant to aluminum toxicity.

Claim 35 (New). The plant according to claim 23 or 25 whereby said plant is drought tolerant.

Claim 36 (New). The plant according to claim 23 or 25 further comprising a novel band identified by SSR probe phi123, SSR probe bnlg2235, SSR probe bnlg1714, SSR probe bnlg1805, or SSR probe dupSSR23, thereof.

Claim 37 (New). The plant according to claim 23 or claim 25, whereby said plant has tolerance to low nitrogen.

Claim 38 (New). The plant according to claim 23 or claim 25, whereby said plant exhibits apomixis.

Claim 39 (New). The plant according to claim 23 or claim 25, whereby said plant is cold tolerant.

Claim 40 (New). The plant according to claim 23 or claim 25, whereby said plant has improved forage quality.

Claim 41 (New). The plant according to claim 23 or claim 25, whereby said plant has more extensive, robust roots.

Claim 42 (New). The plant according to claim 23 or claim 25, whereby said plant exhibits totipotency.

Claim 43 (New). The plant according to claim 23 or claim 25, whereby said plant exhibits perennialism.